Eduvest – Journal of Universal Studies
Volume 4 Number 10, October, 2024
p- ISSN 2775-3735- e-ISSN 2775-3727

SHOULD INVESTORS CHOOSE ESG? EMPIRICAL EVIDENCE OF THE SHILLER P/E RATIO

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ABSTRACT

This study investigates the CAPE Ratio values of stock issuers in the LQ-45 Index compared to those in the ESG Leaders Index, employing a quantitative approach to assess whether the ESG Leaders Index yields higher returns. The findings reveal that most issuers in both indices are undervalued relative to the LQ-45 Index, indicating potential for future returns. However, the LQ-45 Index has a greater number of overvalued issuers than the ESG Leaders Index. Notably, the study acknowledges limitations, including a lack of exploration into the relationship between the CAPE Ratio and non-financial factors such as ESG scores, and a narrow focus on Indonesian indices without comparative analysis with foreign indices. Future research is recommended to explore these relationships, apply the CAPE Ratio across specific sectors, and compare Indonesia's ESG Index with those in Southeast Asia, thereby enriching understanding of valuation dynamics in relation to ESG factors.

KEYWORDS *Shiller P/E Ratio, Green Stock Index, Conventional Stock Index,Financial Performance, Sustainable Investment.*

INTRODUCTION

In recent years, the Government of Indonesia has actively promoted an economic transition towards a green economy, supported by the Indonesia Stock Exchange (IDX) through the establishment of the ESG Leaders Index, launched on December 14, 2022. This index features stocks from companies adhering to ESG (Environmental, Social, and Governance) sustainability principles, evaluating their price performance based on strong ESG ratings, minimal controversies, and robust financial results. However, local companies face challenges in implementing ESG practices, including a lack of awareness, limited resources, inconsistent regulatory frameworks, and financial constraints. The green economic transition is crucial for Indonesia, given its rich biodiversity and vulnerability to climate change, as it not only promotes environmental sustainability but also enhances economic resilience

How to cite: Alferdo et.al (2024). Should Investors Choose ESG? Empirical Evidence of The Shiller P/E Ratio. *Journal Eduvest. 3*(10), 8540-8550
E-ISSN: 2775-3727
Published by: https://greenpublisher.id/

and attracts international investment. As global attention shifts toward sustainable practices, businesses that effectively integrate ESG principles are likely to gain a competitive advantage, further underscored by numerous studies exploring the impact of ESG on company value and the influence of ownership structures on ESG policies (Aydoğmuş et al., 2022; Barros et al., 2021; Vitolla et al., 2020).

Research conducted by Xiaofang Huang (2023), found that the growing importance of sustainable finance and green stock indices emphasizes the need for development and transparency to support a more environmentally responsible economy. The report also discusses the emergence of green indices in China and recommends policy recommendations to boost its growth, especially in highly polluting industries and institutional investment. Another study in China found that the transparency provided by ESG ratings has led to steady growth in the corporate financial sector, which can be seen from the stock valuations of companies in the United States and China (Mneimneh et al., 2023). In addition, ESG ratings are also seen to affect the level of environmental sustainability provided by companies, with the increase in the green innovation sector evidenced by the increasing number of green patents and green technology startups in both countries. However, other studies have found the potential for "green washing", although in the long term, this phenomenon will encourage companies to increase the use of green technology in their operations (de Freitas Netto et al., 2020; Sonko & Sonko, 2023).

Research in India found that the performance of BSE-GREENEX is superior to that of BSE-SENSEX & BSE-500 (Bhattacharya, 2013). Another study in India found that there was a positive relationship between energy efficiency (companies consuming less energy per unit of sales) and the value of companies in the stock market. The authors empirically attribute this larger valuation to the lower volatility of stock returns, which is measured by the standard deviation of daily stock returns. Finally, the authors observed that investments in energy-efficient companies are less sensitive to their internal cash flows (Jadiyappa & Krishnankutty, 2022).

Research on corporate valuation using ESG and green accounting in Indonesia found that sustainability performance has a positive effect on company value, while green accounting has a negative effect on company value (Zhan, 2023). Meanwhile, ESG disclosure has no effect on the company's value. Sustainability performance and the implementation of green accounting need attention in order to have a positive impact on the company by increasing the effectiveness and efficiency of its implementation and integrating it into the company's operational activities (Lindawati et al., 2023).

Research on the Greek Stock Exchange found that, while the P/E and P/BV ratios do not correlate with future yields, the CAPE ratio and its variation CAPE 5, which uses 5-year real earnings, is an efficient estimator for future returns. The results of their research indicate information inefficiencies in the Greek Stock Market (Kenourgios et al., 2022). Research in the United States found that, even when CAPE is in the ninth decile, the next 10-year stock yield is, on average, higher than the 10-year US Treasury yield. Thus, the results are largely consistent with market efficiency. Second, consistent with the risk-reward trade-off, they found that CAPE negatively correlates with future stock market volatility (Agyei & Bossman, 2023). Research on the S&P 500 Index found that investors should consider various

factors, including required returns and expected earnings growth when making capital allocation decisions across asset classes. Exiting the equity market simply because the CAPE Ratio suggests that the overpriced equity market may not yield the results investors expect (Park, 2021).

Research in Indonesia shows that the Current Ratio and price to book value simultaneously have a positive and significant effect on financial distress in companies in the hotel, tourism, and restaurant sub-sectors listed on the Indonesia Stock Exchange (Arifuddin et al., n.d.). Research in Jordan found that the independent variables, namely ROE, CR, and the OG-P mediating variable, were found to be statistically significant and justified the change in market value. Another factor is that TA and DR failed to prove their influence on the company's market value. The cost of oil and gas emphasizes its impact on market value as a single variable effect and a combined variable effect (BUI & NGUYEN, 2021).

Based on the previous research above, it was found that there is still a research gap in Indonesia that has not been conducted in comparing the value of the LQ-45 Index with the ESG Leader Index using the CAPE Ratio. This study seeks to fill the research gap and find out whether the performance of the ESG Leaders Index is superior to the performance of the LQ-45 Index.

RESEARCH METHOD

This research is a type of quantitative research using secondary data**.** Data related to stock prices and market index prices are taken from the Investing.com website, and data regarding the company's financial statements are taken on the britama.com website. Data on stock issuers included in the ESG Leaders Index and the LQ-45 Index are taken on the IDX.co.id website. Data regarding research articles are taken from situsresearchrabbit.com.

The population in this study is all stock issuers selected to be members of the ESG Leaders Index and the LQ-45 Index from January 2020 - December 2023. The ESG Leaders Index updates its member data twice a year (early March and September). The LQ-45 Index updates its member data 2 times a year (February - July and August - January). The purposive sampling method was used in this study. The criteria for the selected sample are as follows:

1. Stock issuers that are consistently members of the LQ-45 Index for the 2020 - 2024 period.
2. Stock issuers that are consistently members of the ESG Leaders Index for the 2021 - 2024 period
3. The stock issuer conducted an IPO in October 2009.

Based on the criteria set above, the selected stock issuers are shown in the table below:

Table 1. LQ-45 Index 2020 - 2024

Number	Issuer Code
1	ADRO
2	ANTM
3	ASII
4	BBTN

5	CPIN
6	ICBP
7	INCO
8	INDF
9	INKP
10	INTP
11	ITMG
12	JPFA
13	KLBF
14	MDKA
15	MEDC
16	MICA
17	PGAS
18	PTBA
19	PTPP
20	SMGR
21	TPIA
22	UNTR

Source: Data processed by the author's team

Table 2. ESG Leaders Index 2021 - 2024

Number	Issuer Code
1	ASSA
2	BFIN
3	BMTR
4	DMAS
5	MAPI
6	WOOD

Source: Data processed by the author's team

Table 3. Issuers Included in the LQ-45 Index (2020 - 2024) and ESG Leaders (2021 - 2024)

Number	Issuer Code
1	ACES
2	AKRA
3	BBCA
4	BBNI
5	BBRI
6	BMRI
7	BSDE
8	CTRA
9	ERAA
10	EXCL
11	HMSP
12	JSMR
13	MNCN
14	PWON
15	SCMA

16	TBIG
17	TLKM
18	TOWR
19	UNVR

Source: Data processed by the author's team

RESULT AND DISCUSSION

The table below displays the results of the calculation of Average EPS on stock issuers, as follows:

Table 4. Average EPS for All Issuers (2020 - 2024)

Number	Issuer Code	Average EPS			
		2020	2021	2022	2023
1	ADRO	133.25	163.54	291.24	282.35
2	ANTM	46.25	33.75	18.22	26.73
3	ASII	454.00	460.00	483.50	519.10
4	ASSA	21.37	25.50	26.98	27.05
5	BBTN	167.10	177.20	191.20	201.30
6	BFIN	228.60	233.40	213.30	190.90
7	BMTR	51.90	54.69	52.19	51.83
8	CPIN	170.40	178.10	179.60	178.20
9	DMAS	16.88	18.36	20.89	21.23
10	ICBP	305.60	343.50	364.10	404.90
11	INCO	95.69	87.33	110.50	145.77
12	INDF	450.60	502.90	538.20	602.50
13	INKP	598.95	733.60	971.39	1038.19
14	INTP	910.81	861.79	785.44	706.18
15	ITMG	2390.93	2568.80	3868.31	4302.49
16	JPFA	97.20	108.60	111.40	113.80
17	KLBF	58.74	49.73	53.30	55.18
18	MAPI	84.90	65.70	52.40	43.20
19	MDKA	10.68	12.63	16.79	17.20
20	MEDC	8.55	8.06	35.80	49.70
21	MICA	34.97	43.57	50.77	54.65
22	PGAS	198.53	189.87	171.58	152.04
23	PTBA	614.30	550.60	533.80	504.80
24	PTPP	130.60	129.90	127.90	126.90
25	SMGR	651.10	619.30	577.30	518.90
26	TPIA	66.74	74.71	99.37	94.95
27	UNTR	1792.30	1902.20	2315.20	2753.10
28	WOOD	20.77	29.23	32.03	33.55
29	ACES	37.35	39.77	41.15	42.65
30	AKRA	189.29	134.40	129.68	127.03

31	BBCA	618.50	599.60	584.60	566.20
32	BBNI	538.70	566.00	626.50	634.00
33	BBRI	541.16	502.07	460.15	413.42
34	BMRI	592.04	599.21	576.89	557.87
35	BSDE	117.65	119.30	123.58	117.50
36	CTRA	59.60	66.90	73.00	76.60
37	ERAA	104.73	102.29	93.72	86.90
38	EXCL	82.40	61.30	39.40	37.10
39	HMSP	945.60	769.00	549.10	311.10
40	JSMR	224.50	229.06	243.31	321.81
41	MNCN	117.54	127.95	131.58	127.32
42	PWON	32.83	34.84	36.48	38.50
43	SCMA	75.37	71.88	65.20	56.98
44	TBIG	126.74	123.76	113.02	105.15
45	TLKM	170.03	183.72	191.29	201.34
46	TOWR	103.70	107.80	111.30	116.20
47	UNVR	506.50	467.00	417.70	360.20

Source: Data processed by the author's team

The table below displays the results of the calculation of the CAPE Ratio of each stock issuer based on their index group, as follows:

Table 5. CAPE Ratio LQ-45 Index

Number	Issuer Code	CAPE Ratio			
		2020	2021	2022	2023
1	ADRO	10.73	13.76	13.22	8.43
2	ANTM	41.84	66.66	108.92	63.80
3	ASII	13.27	12.39	11.79	10.88
4	BBTN	9.95	9.41	7.06	6.21
5	CPIN	38.29	33.41	31.46	28.20
6	ICBP	31.33	25.33	27.46	26.12
7	INCO	52.54	52.83	63.35	29.15
8	INDF	15.20	12.58	12.50	10.71
9	INKP	17.41	10.67	8.98	8.02
10	INTP	15.89	14.04	12.60	13.31
11	ITMG	5.79	7.94	10.09	5.96
12	JPFA	15.07	15.84	11.62	10.37
13	KLBF	25.20	32.47	39.21	29.18
14	MDKA	222.02	300.57	245.33	156.98
15	MEDC	69.01	57.84	28.35	23.24
16	MICA	78.07	51.87	62.83	52.15
17	PGAS	8.34	7.24	10.26	7.43
18	PTBA	4.57	4.92	6.91	4.83

19	PTPP	14.28	7.62	5.59	3.37
20	SMGR	19.03	11.67	11.39	12.33
21	TPIA	30.85	24.51	25.86	55.29
22	UNTR	14.84	11.64	11.26	8.22

Source: Data processed by the author's team

Table 6. Cape Ratio ESG Leaders Index

Number	Issuer Code	CAPE Ratio			
		2020	2021	2022	2023
1	ASSA	29.71	130.22	28.72	29.20
2	BFIN	2.45	4.18	4.95	6.31
3	BMTR	5.59	4.75	5.33	5.17
4	DMAS	14.57	10.40	7.61	7.68
5	MAPI	9.31	10.81	27.58	41.44
6	WOOD	26.96	28.74	11.30	8.59

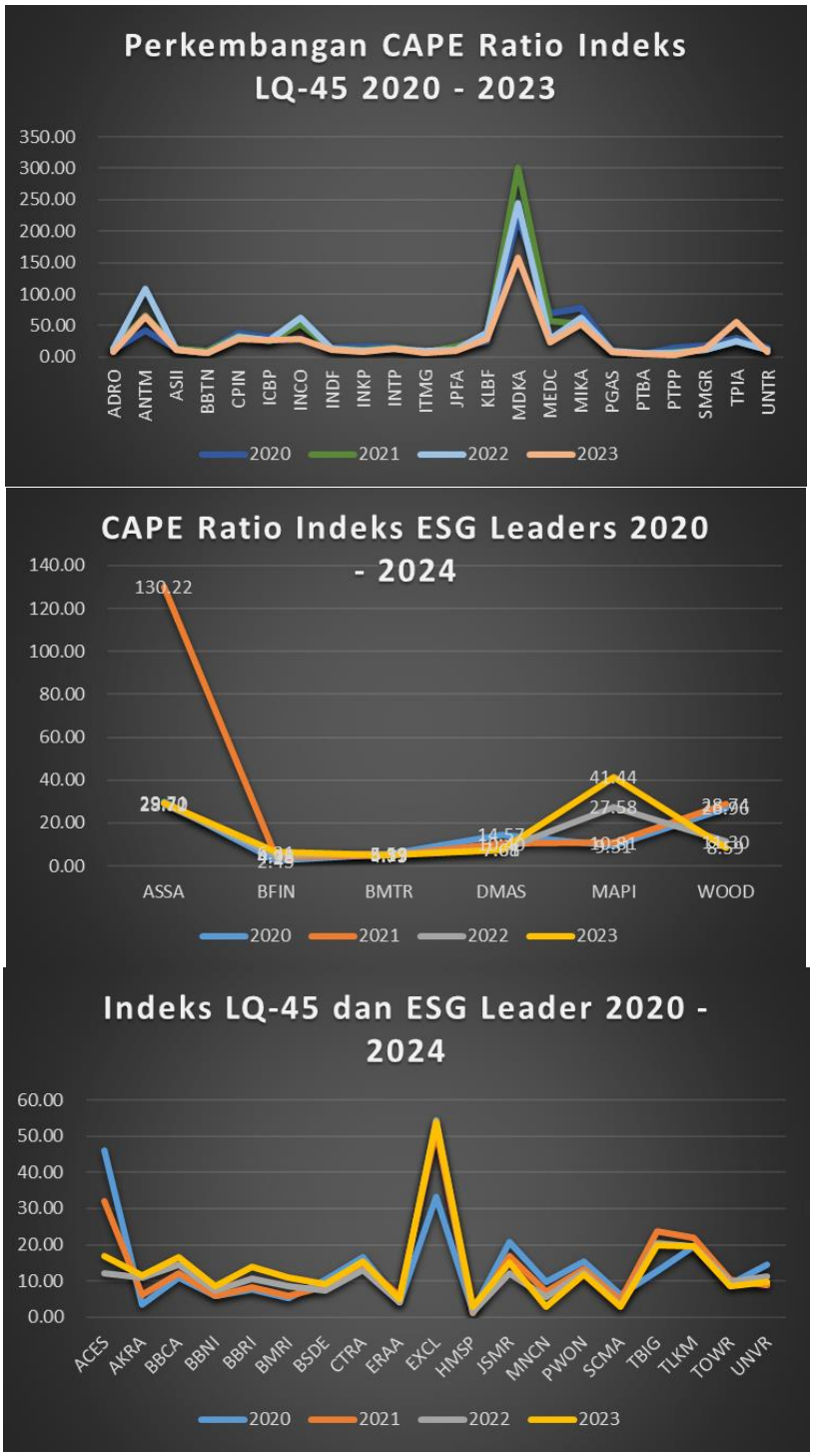
Source: Data processed by the author's team

Table 7. CAPE Ratio Combined LQ-45 Index and ESG Leaders

Number	Issuer Code	CAPE Ratio			
		2020	2021	2022	2023
1	ACES	45.92	32.19	12.05	16.88
2	AKRA	3.36	6.12	10.80	11.61
3	BBCA	10.95	12.17	14.63	16.60
4	BBNI	5.73	5.96	7.36	8.48
5	BBRI	7.52	8.19	10.74	13.85
6	BMRI	5.34	5.86	8.60	10.84
7	BSDE	10.41	8.47	7.44	9.19
8	CTRA	16.53	14.50	12.88	15.27
9	ERAA	4.20	5.87	4.18	4.90
10	EXCL	33.13	51.71	54.31	53.91
11	HMSP	1.59	1.25	1.53	2.88
12	JSMR	20.62	16.98	12.25	15.13
13	MNCN	9.70	7.03	5.62	3.03
14	PWON	15.54	13.32	12.50	11.79
15	SCMA	6.08	4.54	3.16	2.98
16	TBIG	12.86	23.84	20.35	19.88
17	TLKM	19.47	21.99	19.60	19.62
18	TOWR	9.26	10.44	9.88	8.52
19	UNVR	14.51	8.80	11.25	9.80

Source: Data processed by the author's team

Below will be a comparison chart of the three indices above, as follows:



Graph 1. CAPE Ratio Curve of LQ-45 Index, ESG Leader Index, and LQ-45 Index with ESG Leader 2020 - 2024

Source: Data processed by the author's team

The table below displays the categorization of CAPE Ratio values as follows:

Table 8. Categorization of CAPE Ratio Values

CAPE Ratio	Category	Interpretation
< 10	Very Low	Potential Undervalued
10 - 15	Low	Undervalued or Fairly Valued
15 - 20	Keep	Fairly Valued
20 - 25	Tall	Potential Overvalued
> 25	Very High	Overvalued

Source: Gemini AI

Based on the results of the categorization in the table above show that the issuers of stocks included in the LQ-45 Index and the ESG Leader Index are mostly still declared undervalued and have the potential to have higher values in the future. EXCL has an overvalued value due to high market expectations due to the application of 5G technology and good financial fundamentals, and ACES experienced an overvalued period in 2020 and 2021 due to the expectations of investors who believe that ACES's financial performance remains solid despite the impact of COVID-19. Among the issuers included in the ESG Leader Index, ASSA has an overvalued value in 2021 due to market expectations for ASSA's management performance and ASSA's logistics business, which, during the pandemic, had a good performance. In the LQ-45 index, companies in the mining sector, such as ANTM, INCO, MDKA, and MEDC, have an overvalued value due to optimistic signals given by investors because these mining companies do business in the nickel mining sector (ANTM, INCO, and MDKA) as raw materials for battery technology for electric cars, and the petroleum and gas (MEDC) business which is still the energy backbone of the world economy. Companies in the health sector, such as KLBF and MIKA, are overvalued due to positive signals from investors who see the financial performance of these two companies getting better, both during the COVID-19 outbreak and after the COVID-19 outbreak and supported by competent management. CPIN was overvalued both during and after the COVID-19 period due to the views of investors who positively assessed the business strategy carried out by CPIN's management. TPIA is overvalued because in 2020 – 2022, TPIA gets cheap crude oil in the international market, and TPIA's management ability to overcome the increase in crude oil in 2023 along with TPIA is the only company in Indonesia able to produce high-quality Naptha Cracker products so that demand remains high. ICBP has an overvalued value because this company produces snacks and is the parent of the world's largest noodle subsidiary, INDF, so investors consider that the value of ICBP and its subsidiaries is high.

CONCLUSION

This study yields several key conclusions: First, the majority of issuers included in both the LQ-45 Index and the ESG Leaders Index are currently undervalued and show potential for higher future returns. Second, there are more overvalued issuers in the LQ-45 Index compared to those in the ESG Leaders Index. However, the study also has notable limitations. It relies on simple quantitative

calculations without exploring the relationship between the CAPE ratio and non-financial factors such as ESG scores and the presence of independent commissioners. Additionally, the analysis is limited to stock issuers within specific indices rather than examining broader sector-based performance. Furthermore, the study focuses solely on indices from the Indonesia Stock Exchange, excluding comparisons with similar indices in other countries, such as Malaysia.

For future research, it is recommended to investigate the relationship between the CAPE ratio and non-financial factors. Researchers should also consider applying the CAPE ratio to stock issuers within specific sectors rather than only within selected stock indices. Lastly, comparative studies could enhance understanding by examining the ESG Index in Indonesia alongside indices from other Southeast Asian countries, utilizing the CAPE ratio as a benchmarking tool. These contributions will help address the study's limitations and provide a more comprehensive understanding of the interplay between valuation and ESG factors in the Indonesian market.

REFERENCES

Agyei, S. K., & Bossman, A. (2023). Investor sentiment and the interdependence structure of GIIPS stock market returns: A multiscale approach. *Quantitative Finance and Economics*, *7*(1), 87–116.

Arifuddin, S., Hadisantoso, E., Ramadhan, A. M. F., & Made, S. (n.d.). *The Influence of Current Ratio and Price to Book Value on Financial Distress Conditions in Tourism and Restaurant Hospitality Sub-Sector Service Companies Listed on the Indonesian Stock Exchange*.

Aydoğmuş, M., Gülay, G., & Ergun, K. (2022). Impact of ESG performance on firm value and profitability. *Borsa Istanbul Review*, *22*, S119–S127. https://doi.org/10.1016/j.bir.2022.11.006

Barros, V., Verga Matos, P., Miranda Sarmento, J., & Rino Vieira, P. (2021). Do activist shareholders influence a manager's decisions on a firm's dividend policy: A mixed-method study. *Journal of Business Research*, *122*, 387–397. https://doi.org/10.1016/j.jbusres.2020.08.048

Bhattacharya, R. (2013). Effect of going green on stock prices: a study on BSE-Greenex. *International Journal of Computer Applications*, *975*, 8887.

BUI, M. T., & NGUYEN, H. M. (2021). Determinants affecting profitability of firms: A study of oil and gas industry in Vietnam. *The Journal of Asian Finance, Economics and Business*, *8*(1), 599–608.

de Freitas Netto, S. V., Sobral, M. F. F., Ribeiro, A. R. B., & Soares, G. R. da L. (2020). Concepts and forms of greenwashing: A systematic review. *Environmental Sciences Europe*, *32*, 1–12.

Huang, X. (2023). The Impact of Green Stock Indices and ESG Considerations on Sustainable Finance—A Study of Chinese Green Indices. *Financial Engineering and Risk Management*, *6*(10). https://doi.org/10.23977/ferm.2023.061019

Jadiyappa, N., & Krishnankutty, R. (2022). Do stock markets value green operations? Evidence from India. *International Journal of Managerial Finance*, *18*(4), 661–676. https://doi.org/10.1108/IJMF-06-2021-0305

Kenourgios, D., Papathanasiou, S., & Bampili, A. C. (2022). On the predictive power of CAPE or Shiller's PE ratio: The case of the Greek stock market. *Operational Research*, 1–20.

Lindawati, A. S. L., Geraldine, T. G., Handoko, B. L., Widuri, R., & Mustapha, M. (2023). ANALYSIS OF SUSTAINABILITY PERFORMANCE, GREEN ACCOUNTING AND ESG DISCLOSURE ON FIRM VALUATION. *International Journal of Contemporary Accounting*, *5*(2), 183–198. https://doi.org/10.25105/ijca.v5i2.17745

Mneimneh, F., Al Kodsi, M., Chamoun, M., Basharoush, M., & Ramakrishna, S. (2023). How Can Green Energy Technology Innovations Improve the Carbon-Related Environmental Dimension of ESG Rating? *Circular Economy and Sustainability*, *3*(4), 2183–2199. https://doi.org/10.1007/s43615-023-00261-6

Park, S. (2021). The P/E ratio, the business cycle, and timing the stock market. *Journal of Portfolio Management*, *47*(8), 165–183.

Sonko, K. N. M., & Sonko, M. (2023). Demystifying Environmental, Social and Governance (ESG). *Palgrave Studies in Impact Finance*.

Vitolla, F., Raimo, N., & Rubino, M. (2020). Board characteristics and integrated reporting quality: an agency theory perspective. *Corporate Social Responsibility and Environmental Management*, *27*(2), 1152–1163. https://doi.org/10.1002/csr.1879

Zhan, S. (2023). ESG and Corporate Performance: A Review. *SHS Web of Conferences*, *169*, 01064. https://doi.org/10.1051/shsconf/202316901064